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ABSTRACT

Teachers need to be proficient in the application of word analysis skills in order to insure their ability to provide adequate instruction to others. This study reports on the development of a word analysis test which evaluates potential teachers' ability to apply nine structural analysis generalizations before and after instruction in word analysis. The tests were administered to 83 students enrolled in teacher education courses in basic reading skills before instruction in syllabication was introduced and after such instruction was completed. Analysis of the data in this study indicated that definite gains can be made in raising the proficiency level of students' syllabication skills after systematic instruction in these generalizations. Pre-testing with a measurement tool that was designed to be a specific diagnostic aid as well as a general evaluative test proved to be of assistance to the instructors and to the individual students in directing emphasis for teaching and learning. A multiple choice form of the test was found to be as useful as a form which required students to syllabicate the words themselves. (MKM)

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SYLLABICATION SKILLS OF COLLEGE STUDENTS

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The mastery of the skills that leads to recognition and to the meaning of words should not be left to chance or haphazard practice. Instruction in word recognition involves the use of context clues, phonetic analysis, the dictionary, and structural analysis (Karlin, 1971).

Structural clues aid in the pronunciation and understanding the meaning of words. Root words, affixes, accents, and syllabication provide ways of breaking down unknown words. Heilman (1968, p. 77) proposes three purposes for syllabication: (1) pronunciation of words not instantly recognized as sight words, (2) determining correct spelling of many words, and (3) dividing words at the end of a line of writing.

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Schnepf and Meyer (1971) attested to the importance of combined techniques for word recognition when they emphasized the necessity for all programs to eventually include structural analysis and some use of content clues. Spache and Spache (1969) considered syllabication functions as an aid to word recognition by helping the pupil break words into smaller units, pronounce these, blend, and thus recognize words in his auditory vocabulary. Most normal readers, as they mature in reading in intermediate and upper elementary grades become increasingly dependent upon their knowledge of syllables and less upon letter phonics.

The importance associated with the development of word analysis skills by college students who are prospective teachers is demonstrated in a research study reported by Austin et al (1961) which indicated that:

> . . . many prospective teachers themselves do not know these techniques. Many of the current generation of college students were taught to read by methods which did not include structural and phonetic analysis and thus have never been exposed to them. If they are able to use a variety of approaches in their teaching, they should know the basic elements of these ways of unlocking words. Therefore, it is recommended: that college instructors take greater responsibility in making certain that their students have mastered the principles of phonetic and structural analysis.

The primary reason for emphasizing teachers' proficiency in the application of the word analysis skills is to insure their ability to provide adequate instruction to others.

The present study focused on the problem of evaluating students' proficiency in applying nine structural analysis generalizations with a

pre-test before instruction and a post-test after the students had received instruction in application of the nine generalizations.

In order to obtain the necessary data for determining the performance levels of students it was necessary to construct and standardize a measuring instrument in that none was available.

Construction and Standardization of Tests

Structural analysis generalizations to be tested were selected by applicability of usage in vocabulary of five basal reading series for grades one through six (Wood, 1973). Subject-matter experts were consulted for verification of the value of the nine generalizations to the field of reading for the purpose of establishing the educational validity. The generalizations utilized were:

1. A single consonant usually goes with the vowel which follows when that consonant appears between two vowels.
2. A single consonant appearing between two vowels usually goes with the preceding vowel if that vowel is short and within an accented syllable.
3. No syllabic division should be made between consonants that constitute a consonant blend or consonant digraph.
4. The syllabic division of two consonants, which are neither blend nor digraph, and which appear between two vowels, usually comes between the two consonants.
5. Prefixes usually form separate syllables.
6. Suffixes usually form separate syllables.
7. The suffix -ed, if immediately preceded by the letter d or t, forms a separate syllable. The suffix -ed combines with other letters to form one syllable if not preceded by d or t.

8. A word ending in le, when the le is preceded by a consonant, forms a final syllable with that consonant and the le. (Note: le stands alone as the final syllable when preceded by ck.
9. A syllabic division is made between words which form a compound.

The test items were constructed of words that tested these nine generalizations (Curry and Rigby, 1969, p.v). Six forms of the one hundred item test were constructed--A, A-1, B, B-1, C, and C-1. For diagnostic purposes and analyzation, tables were constructed to identify items by frequency and distribution of generalizations by test item. Generalization one shows a slightly higher total of appearances due to the prevalence of this generalization in many other vocabulary words that were tested for other generalizations. Generalizations five and six were tested more often due to the great number of prefixes and suffixes. Generalization nine has been shown to be easily mastered by students so was tested less frequently. Generalization two, three, four, seven and eight were given nearly equivalent weights. Examination of the frequency and distributions of items shows that nearly equivalent weights were achieved in all test forms.

The tests were administered as post-tests to seventy-nine students enrolled in a basic skills course in reading to determine the validity and reliability and to determine whether the forms were parallel.

Forms A-1, B-1, and C-1, consist of the identical items as A, B and C respectively. Forms A-1, B-1, and C-1 are traditional forms of syllabication tests and the students are required to syllabicate the word by dividing it into it's syllabic parts. Forms A, B and C are comprised of multiple-choice items constructed with four options,

consisting of one correct response and three distracters. Concurrent validity was evaluated by correlating the Pearson correlation coefficients of students scores on each of the two identical tests. Concurrent validity showed correlation coefficients of A and A-1 (.83), B and B-1 (.82), and C and C-1 (.85). To determine validity between forms Pearson correlations indicated coefficients for A and B-1 (.79), A and C-1 (.79), B and A-1 (.79), B and C-1 (.77), C and A-1 (.72) and C and B-1 (.80). Concurrent validity coefficients and validity coefficients between forms were significant at the .001 level.

Parallel form reliability (immediate) was evaluated by computing Pearson correlation coefficients which showed correlations for A and B (.79), A and C (.79), B and C (.75), A-1 and B-1 (.74), A-1 and C-1 (.77) and B-1 and C-1 (.79). Internal consistency was evaluated by using the Kuder-Richardson twenty formula on all forms which yielded significant correlations at the .001 level for forms A (.86), A-1 (.88), B (.82), B-1 (.83), C (.89), and C-1 (.88).

Means, standard deviations and the standard error of measurement were computed on all forms. Means showed A (87.07), A-1 (89.51), B (90.65), B-1 (89.87) C (90.00) and C-1 (90.15). Standard deviations were A (6.82), A-1 (7.60), B (6.27), B-1 (6.70), C (6.77) and C-1 (7.95). Standard errors of measurement yielded A (2.8), A-1 (2.7), B (2.7), B-1 (2.7), C (2.8) and C-1 (2.8).

The analysis of the data indicated that both content validity and validity as evaluated by judges and examined by frequency and distributions of generalizations met the requirements for the domain to be tested. Validity and reliability correlations were highly significant and the test

forms maintain consistency in means, standard deviations and standard errors of measurement.

Method

The tests were administered to eighty-three students enrolled in teacher education courses in basic reading skills for the 1974 summer term. Students were tested from two institutions.

Students were pre-tested before instruction in syllabication was introduced in the courses. Test forms A and A-1 were used for pre-testing with all students taking both forms and completing all test items. Forms were alternated with one-half of the students taking A-1 while the other half took A. The tests were used to determine students' individual scores, and specific test items missed, and to determine group means, standard deviations and standard errors of measurement.

Systematic instruction and study was then introduced as a part of the basic skill courses. This included presentation of the generalizations and practice by the students through application to words that were representative of each generalization. Analyzation of the pre-test served to guide individual students in their concentration of study by determining their strengths and weaknesses of specific generalizations.

Directions were given to the course instructors for administration of the final test forms. The order of presentation of the four forms was rotated, one-fourth of the students taking each test at one time. This procedure was used to control for test-retest practice effects and other extraneous variables such as fatigue or boredom with the tests. Each student completed all forms of the test.

Forms B, B-1, C and C-1 were used at the completion of instruction to determine if systematic instruction concluded in gains in individual proficiency and group means scores. Means, standard deviations and standard errors of measurement were computed on all forms of the post-tests.

Results

Pre-testing forms yielded mean scores of A (71.9) and A-1 (72.8). The standard deviations were A (10.8) and A-1 (10.8), and the standard error of measurement showed A (3.9) and A-1 (3.7).

Post-testing forms yielded mean scores of B (85.1), B-1 (82.9), C (84.5) and C-1 (84.7). The standard deviations were B (10.0), B-1 (12.2), C (8.5) and C-1 (10.7), and the standard errors of measurement showed B (3.2), B-1 (3.3), C (3.2) and C-1 (3.2).

Mean score gains after completion of systematic instruction and individual study ranged from 10.1 to 13.1. Individual proficiency showed gains in all students scores.

Discussion

The analysis of the data in this study indicated that definite gains can be made in raising the proficiency level of students' syllabication skills after systematic instruction in these generalizations.

Pre-testing with a measurement tool that was designed to be a specific diagnostic aid as well as a general evaluative test, proved to be of vital assistance to the instructors and to the individual students in directing emphasis for teaching and learning. Appropriate direction is given to students by first identifying their strengths and weaknesses,

enabling them to progress according to individual needs, while conserving instructional time through the use of a group test.

Through the evaluation of concurrent validity, it was found that tests A, B, and C, multiple-choice forms of the tests could be substituted for forms A-1, B-1 and C-1, which require the student to syllabicate the words by dividing them into their syllabic parts. The multiple-choice forms will reduce grading time through the use of machine grading or more rapid hand grading.

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